INSET COORDINATOR INSTRUCTIONS

- BEFORE MEETING WITH TEACHERS FOR THIS MODULE, LOOK AT THE ‘MATERIALS FOR THE SESSION’ AND MAKE SURE THAT YOU AND THE TEACHERS BRING THEM.
- BEFORE MEETING WITH TEACHERS FOR THIS MODULE, ENSURE THAT YOU AND THE TEACHERS HAVE READ THE MODULE IN ADVANCE.
- PLEASE HAVE THE TEACHERS SIGN THEIR SIGNATURE BELOW.

SAY TO TEACHERS:

‘Now we will read the introduction to this module. After the first teacher reads a paragraph aloud, they can call on another teacher to read the next paragraph.’

Module 5: Pupil Learning Activities for Counting

CONTENT OF MODULE:
This module provides learning techniques to develop pupils’ number concept and counting skills up to 100 for Standard 1 and up to 1000 for Standard 2. Multiple strategies of developing number sense are introduced and practiced during the module including the use of counting forward and backward, skip counting and storytelling while using teaching aids such as the Number Line, Number Charts and Counters. These strategies develop the pupils’ comprehension of number concept, ability to see patterns, build fluency and improve memory capacity.

CORE CONCEPTS:
1. Counting Forward and Backward – a teaching technique that helps pupils to develop the number concept where they know the forward number sequence to 100 using words and symbols for 0, 1, 2, 3, 4… and the backward sequence from 100, 99, 98, 97… It also helps pupils’ ability to name the number before and after a given number thereby introducing the concept of addition and subtraction.
2. Skip Counting – a teaching technique that helps pupils to develop the number concept; it is counting by a number that is not 1 but by skipping numbers by a number greater than 1 such as by twos or fives or tens.
3. Storytelling – a teaching technique where the teacher narrates a story and the pupils listen; in the context of maths class, storytelling can be used to introduce or explain a difficult mathematical concept.

MODULE LENGTH: 4 hours for Core Concept and Activities + 2 hours of Lesson Planning

MODULE OBJECTIVES:
By the end of this module, teachers will be able to:
1. Increase pupils’ self-confidence through mastery of forward and backward counting skills up to 100 (extend to 1000) using the Number Charts, the Number Line and Counters as teaching aids.
2. Develop pupils’ ability to recognise patterns in number sequence by using skip counting by twos and tens up to 100 in Standard 1 and skip counting by twos, fives and tens up to 1000 in Standard 2.
3. Incorporate effective storytelling to introduce and reinforce maths concepts.

MATERIALS FOR THE SESSION:
1. INSET Module and a pen
2. Notebook, flip chart and markers (or use the blackboard for group work and a slate for individual work)
3. INSET Module 1, Standard 1 Syllabus and Standard 2 Syllabus
4. Any instrument such as a drum or guitar
5. Counters, empty bottles, 1 to 100 Number Chart, Multiples of 10 up to 1000 Number Chart, Number Line

LEARNING ENVIRONMENT FOR THE SESSION:
1. Review the ground rules established by the participants during the first meeting
2. Make revisions to the ground rules if required
3. Arrange the desks so that all participants can see and speak to each other
4. Feel free to ask questions
5. Always be supportive of your colleagues
6. Try to be creative and think about how ideas apply to your classroom
7. Put phones or pagers on silent mode
SAY TO TEACHERS:

“Welcome to Module 5 of the INSET training for Counting. In this module we will learn how to incorporate teaching aids and pupil activities to develop the number concept up to 100 in Std.1 and 1000 in Std. 2. Before we begin, let us each share a success and a challenge faced when putting into practice the concepts and techniques discussed in the previous session. For each challenge that a participant mentions, let’s see if we can come up with a solution. Make sure to write down solutions that you find helpful or address the challenges that you identified.”

READ ALOUD (5 MINUTES)

Since the last session we practiced one or more teaching technique to apply the following concepts developed during the module:

1. Understand that children learn and develop the number concept visually and through repeated practice and repetition.
2. Make, collect and design teaching aids useful in teaching counting skills.
3. Incorporate teaching aids in lessons through pupil activities to help them develop counting skills.
4. Explain the importance of continuously helping pupils’ use maths vocabulary correctly.

The teaching aids focused on were:

1. Bundle of Sticks – a teaching aid made from sticks found in the local environment and useful in teaching children the concept of place value for counting, addition and subtraction.
2. Place Value Chart – a teaching aid in the form of a diagram that can be drawn on paper or on the board and useful in teaching children the concept of place value for counting, addition and subtraction.
3. 1 to 100 Number Chart – a 10 x 10 table of numbers from 1 to 100 mounted on the classroom wall that is useful in teaching children numbers, counting, and patterns in counting such as skipping by 2s or 5s or 10s.
4. Multiples of 10 up to 1000 Number Chart – a 10 x 10 table of numbers from 1 to 1000 mounted on the classroom wall that is useful in teaching children numbers, counting, and patterns in counting such as skipping by 10s.
5. Number Line – a teaching aid in the form of a diagram that can be drawn on paper or on the board that is useful in teaching children the concept of counting forward and backward, addition and subtraction.
6. Vocabulary Cards – pack of cards that have maths terminology and symbols written on it that is useful in teaching children correct mathematical vocabulary.

Take a moment to individually jot down a success as well as a challenge you experienced while conducting these lessons in your class.

WRITE INDIVIDUALLY (10 MINUTES)

- Write down individually a success and a challenge you experienced while applying these strategies in the classroom.
GROUP DISCUSSION (15 MINUTES)

- Share one of these experiences with the group.
- For each challenge, see if you can come up with solutions for your colleagues' challenges.
- During the discussion, write down solutions that pertain to the challenges you identified.

Successes
(Describe the practice you have used and explain how you knew it was successful)

Challenges
(Describe the practice and explain why it is challenging)

Potential Solutions
“Let us reference the syllabus for Standards 1 and the example Scheme of Work in Module 1 to support our learning in this session.”

Review the activities for Recognition of the Number Concept in the 2015 Standard 1 Syllabus (pages 27-31) and Standard 2 Syllabus (pages 26-27).
Review the example pupil activities for Recognition of the Number Concept described in the example Scheme of Work in Module 1 for Standard 1 and Standard 2.
Reflect on the math concept and possible pupil activities for developing the whole number concept up to 100.
Turn to the person to your right and rapidly share example pupil activities that can be used in your classroom for this.

In this module we will:
1. Increase pupils’ self-confidence through mastery of forward and backward counting skills up to 100 (extend to 1000) using the Number Charts, the Number Line and Counters as teaching aids.
2. Develop pupils’ ability to recognise patterns in number sequence by using skip counting by twos and tens up to 100 in Standard 1 and skip counting by twos, fives and tens up to 1000 in Standard 2.
3. Incorporate effective storytelling to introduce and reinforce maths concepts for pupil learning.

Counting is one of the most important skills for young children to master, providing the basis needed to learn basic facts later in school. There is more to counting than the ability to memorize a sequence of words by rote. Each one of the following concepts is interrelated and necessary for children to have a clear understanding of counting to be able to apply this ability during number operations. As addressed in Module 3, children understand numbers and counting when they are able to demonstrate the following:
1. **One-to-One Correspondence**

Children display one-to-one correspondence when they count a group of objects while physically or mentally touching each object once, and only once. Using one-to-one correspondence the child matches up the objects in the two groups, pairing each object in one group with exactly one object in the other group. The child can now tell if the sets are ‘the same’ or ‘different’ in number and which is larger or smaller. In the example below, it is not easy to immediately say if there are more dogs or cats,

![Dog and Cat](image)

But the answer is clear when they are lined up with one-to-one correspondence.

![Matching](image)

Matching activities help young children develop one-to-one correspondence. Activities may include matching pairs (of shoes), distributing materials to each member of a group, sharing food or toys equally amongst classmates, returning materials to shelves, matching object to object (for example, matching classmates to their schoolbags) and matching a picture of a quantity to a set of objects with the same number of items. Gradually, the child recognizes that one group of things can have the same number of elements as another group and abstracts the concept of number.

2. **Cardinality**

Children understand that when you set up a 1-1 correspondence between the number names in their correct order and the set of objects you are trying to count, then the last number name you say is the cardinality (or size) of the group. We can help children develop the understanding of cardinality by involving them in activities where they answer questions about ‘how many’. They need not only to be able to say the counting names in the correct order, but also to count a group of, for example, seven objects and say that there are seven. Counting activities should have some basis in reality, giving a purpose to counting. For example, we can create a need to count by involving children in food preparation. They will need to know how many people or plates in order to complete the task. Once a child has a sense of cardinality, then we can involve them in matching activities where a number word is matched to a quantity and the numeral that belongs to it.
3. **Invariance of Number**
   Children understand that the number of objects does not change if the objects are displaced; in other words, even if the objects are separated into groups or hidden, the total number remains the same.

4. **Inclusion**
   Children understand that number labelling how many objects in a group includes all the objects in the group. In other words, regardless of the order in which the objects are placed, the number remains the same. For instance, “four” indicates the total number of marbles, rather than just the fourth marble.

5. **Ordinal Counting**
   Children understand that the number name indicates the position of something in a series such as First, second, third, fourth, fifth... etc.

6. **Counting-on**
   Children show an ability to count on when they can count a group of objects and continue from the total when an additional group of objects are added, without needing to start at one again.

**Counting forward and backward helps to develop pupils understanding of the above mentioned concepts.** Counting forward helps pupil develop understanding of the number sequence to 100 (or 1000) using words and symbols for 0, 1, 2, 3, and 4 onwards. Counting forward also introduces the idea of adding or one more. Counting backward from 100, 99, 98, and 97 down to 1 is a more challenging skill for pupils to develop but important as it introduces the concept of subtract or one less. Developing mastery of counting forward and backward sets the foundation for developing number operations and other mathematical concepts. This ability should be developed using a variety of counting experiences such as counting songs or rhymes, finger play, games and working with counters.

**GROUP DISCUSSION (10 MINUTES)**

1. What were some of the new or important ideas that you marked with an exclamation (!) point?
2. What were some of the unclear ideas that you marked with an exclamation (?)?
3. What were new concepts that you circled?

---

**ACTIVITY – COUNTING FORWARD AND BACKWARD**

**SAY TO TEACHERS:**
“Now you will do an activity with your group. First take 5 minutes to silently read the example lesson that illustrates how to use counting forward and backward to develop the number concept.”

**SILENT REFLECTION (5 MINUTES)**
- Read the example lesson plan below silently and think about how you can try it in your classroom
- Write down any doubts or questions in your notebook to share with the group at the end of this session
- Remember that skip counting is only introduced once pupils have mastered counting.

<table>
<thead>
<tr>
<th>Learning Objective:</th>
<th>Count up to 100</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lesson Objective:</td>
<td>One more than and one less than a number</td>
</tr>
<tr>
<td>Material:</td>
<td>Counters, Number Cards, Band of 10</td>
</tr>
<tr>
<td>Vocabulary or Phrase:</td>
<td></td>
</tr>
</tbody>
</table>

**Image of Child Counting**
Activities: Game, Group Work, Show me Thumbs! one more, one less

Steps to follow:
1. Introduction (10 minutes): Begin with a warm up game; the teacher should demonstrate the activity and then the children can follow.
   - Have pupils stand in a circle or come away from their benches so that there is room to move.
   - Have the children shrink their body down to a ball by crouching down. As they begin to count up to 20 have them stretch their bodies larger and larger until the number 20 is reached.
   - Then beginning from 20 have the children count backwards while pupils’ bodies shrink in size as the numbers get smaller and smaller until they reach zero.
   - Repeat this process several times each time growing or shrinking as the number gets larger or smaller.
   - Now call out a number out of sequence and have them act it out with their body in size.
   - This should be done like a game so that children are enjoying it and are excited to play it.

2. New Knowledge (15 minutes):
   - Have pupils form groups of 3 to 5.
   - Select 3 students to be your teaching assistant.
   - Give each group Counters and a flip chart or slate or paper with two Bands of 10 drawn on it.
   - Explain the rules of the activity very carefully to the class.
   - Shuffle a deck of number cards from 0 to 20. Pick a card from the top of the deck and call it out to the class and ask the groups to represent one more than the number.
   - Each group has put counters in the Band of 10 to show the correct number of counters. For example, if you called out 11, the Band of 10 should show 12.
   - Walk around and check on each group.
   - Your teaching assistant should walk around and check on the groups as well.
   - Repeat this with other numbers several times, sometimes asking for one less and other times for one more. Remind pupils that a Band of 10 is filled from left to right, top row to bottom row.

3. Lesson Knowledge Check (5 minutes):
   - Instruct students as follows: “Show me a thumbs up if you agree, thumbs down if you disagree” in silence. Pose the following statements where some are true and some are false:
     - One more than 16 is 18
     - One less than 20 is 19
     - One more than 11 is 12
     - One less than 1 is 2
     - One less than 1 is 0
     - One more than

ROLE PLAY (20 MINUTES)

- In a group, practice the song, new knowledge and reinforcement parts of the lesson. One teacher can play the role of the maths teacher and all the others can pretend to be pupils in Standard 1.
TURN AND TALK (5 MINUTES)

- After trying the activity, turn and talk to the person to your right about the experience. Some questions to reflect on:
  - Do you think this activity is suitable for your classroom?
  - Will you practice it in your class?
  - What challenges do you think you will encounter in trying it in the class?

CORE CONCEPT

SAY TO TEACHERS:

“Now we will read the core concept. We will take turns reading the text aloud. After the first teacher finishes the paragraph, he/she can call out another teacher’s name so that they read the next paragraph. While we are reading, you should mark any key information. Put an exclamation point (!) Next to anything you think is important. Put a question mark (?) Next to anything that confuses you or that you disagree with. Finally circle (o) any new words.”

CORE CONCEPT – SKIP COUNTING

READ ALOUD (10 MINUTES)

1. One teacher should start reading out loud. After he/she finishes the first paragraph, he/she can call out another teacher’s name so that they read the next paragraph.
2. While reading:
   - Put an exclamation point (!) next to anything that you find important
   - Put a question mark (?) next to anything you don’t understand or don’t agree with
   - Circle (o) any words that are new to you.

Skip Counting is counting by a number that is not 1. In other words, it is counting by skipping numbers by a number greater than 1 such as by twos or fives or tens. For example, to skip count by twos is to count as follows: 2, 4, 6, 8, 10, 12, 14, 16, 18, 20 etc. To skip count by fives is to count as follows: 5, 10, 15, 20, 25, 30, 35, 40 etc. To skip count by tens is to count as follows: 10, 20, 30, 40, 50, 60 etc.

You may think that to skip count is no different from the multiplication table. You are correct! You may think that multiplication is only taught in Standard 3 onwards. You are correct again! However, it is recommended to incorporate this teaching strategy in Standards 1 and 2 because it emphasises recognising patterns in counting for children. The concept of multiplication should not be mentioned at this level although learning to skip count creates a strong foundation for children when they enter Standard 3 to easily learn the multiplication table. Instead, emphasise the patterns when one skip counts. For example, when skip counting by 2, we begin at 2 and skip every other number. When skip counting by fives the numbers always end in either 5 or 0. When skip counting by tens, the number always ends only in 0.

You can teach skip counting by creating a song that pupils can sing while you point at the numbers on the Number Chart or Number Line. You can also make it an enjoyable game for children such as asking them to count while skipping with a skipping rope or forming a circle and throwing a ball around the circle while skipping the number of pupils you are skip counting by.
By learning to skip count, pupils start to realize the concept of place value and get ready to learn bigger numbers. By learning to skip count, pupils also develop mental arithmetic skills, which is useful with addition and subtraction. It also helps a child become fluent with basic facts such as the multiples of 2, 5 and 10, which frees up working memory to learn other new skills. Skip counting should be introduced only after a child is confident with basic counting from 1 to 100 in Standard 1 and 1 to 1000 in Standard 2.

Skip Counting is a teaching strategy that addresses the specific competency of Recognition of Number Concept and the learning objectives of developing the whole number concept and count up to 100 in Standard 1 and count up to 1000 in Standard 2.

GROUP DISCUSSION (10 MINUTES)

4. What were some of the new or important ideas that you marked with an exclamation (!) point?
5. What were some of the unclear ideas that you marked with an exclamation (?)?
6. What were new concepts that you circled?

ACTIVITY

ACTIVITY – SKIP COUNTING

SAY TO TEACHERS:
“Now you will do an activity with your group. First take 5 minutes to silently read the example lesson that illustrates how to use skip counting to develop the number concept.”

Learning Objective: Count up to 100
Lesson Objective: Skip Count by tens up to 100

Material: Counters, Empty bottles, 1 to 100 Number Chart

Activities: Song, Group Work, Fill in the blank

Vocabulary or Phrase: Skip count by ten

Steps to follow:
1. Introduction (5 minutes): Begin with a warm up activity so have your children stand up and sing the song below with actions; you can make up your own tune or replace the song with another song of your choosing that makes reference to the number 10:

   **Ten Fingers**

   I have ten fingers (hold up both hands, fingers spread)
   And they all belong to me (point to self)
   I can make them do things –

   

   (Actions: pat, tap, spin, point, wave, etc.)

   Then choose another number or combination of numbers to make a fun or memorable song.

   

   **Example:**

   I have four wheels (

   (Actions: spin around)

   And they all belong to me.

   (Actions: pat)

   I can make them move –

   (Actions: turn, shake, bounce, etc.)

   (Students can select any words that make sense to them.)
Would you like to see?

I can shut them up tight (make fists)
I can open them wide (open hands)
I can put them together (place palms together)
I can make them all hide (put hands behind back)

I can make them jump high (hands over head)
I can make them jump low (touch floor)
I can fold them up quietly (fold hands in lap)
And hold them just so.

2. **New Knowledge** (30 minutes):
   - Put ten counters in the transparent bottle. Have your pupils count to confirm the number of counters.
   - Show four bottles each with 50, 70, 80 and 100 counters that you prepared before class and ask them to guess the number of counters in each bottle.
   - For each child that guesses, ask him or her to explain the reason.
   - Now give each bottle to a group of 3 to 6 students to empty out on the floor and count to verify the amount. Instruct them to count in groups of 10 and make piles. This means more than one student in a group can be counting groups of 10.
   - Bring groups back together as one class and pose the question “Do you notice a pattern when you count by 10s?”
   - Call on a few students to explain the pattern that they see. Children notice patterns that adults may not see so allow your pupils to explore their creativity by posing guiding questions to help them see the pattern for skip counting by tens. Provide positive encouragement to all of the pupils who participated in the discussion.
   - Now give your own explanation: “*When you count by tens the numbers create a pattern. All the numbers end in zero. The first digits are the same as the number when you count 1, 2, 3, 4….*” Illustrate this by pointing at the 1 to 100 Number Chart or by writing the numbers on the board.

3. **Reinforcement** (10 minutes):
   - Now point to the 1 to 100 Number Chart on the wall and ask the class to count out loud by tens as you point at the number 10, 20, 30, 40, 50, 60, 70, 80, 90, 100.
   - Repeat this a few times, counting forward and backward 100, 90, 80, 70, 60, 50, 40, 30, 20, 10.
   - You can add a tune to the counting so that it is like a song.
   - Reiterate the pattern by repeating: “*When you count by tens the numbers create a pattern. All the numbers end in zero. The first digits are the same as the number when you count from 1 to 9*”
4. **Lesson Knowledge Check (15 minutes):**

- Now put up 5 exercises on the board for pupils to copy down in their notebook or slate and *Fill in the Blank*. Walk around and check their individual work. Complete the exercises with the class.

   ![Fill in the Blank Exercises](image)

   This lesson is set for 1 hour. If you set the two half-hour blocks for Counting together, this entire lesson can be completed. Alternatively, you can redesign the lesson into two separate half-hour blocks.

**ROLE PLAY (20 MINUTES)**

- In a group, practice the song, new knowledge and reinforcement parts of the lesson. One teacher can play the role of the maths teacher and all the others can pretend to be pupils in Standard 1.

**TURN AND TALK (5 MINUTES)**

- After trying the activity, turn and talk to the person to your right about the experience. Some questions to reflect on:
  - Do you think this activity is suitable for your classroom?
  - Will you practice it in your class?
  - What challenges do you think you will encounter in trying it in the class?

---

**CORE CONCEPT**

“Now we will read the core concept. We will take turns reading the text aloud. After the first teacher finishes the paragraph, he/she can call out another teacher’s name so that they read the next paragraph. While we are reading, you should mark any key information. Put an exclamation point (!) Next to anything you think is important. Put a question mark (?) Next to anything you don’t understand or don’t agree with. Circle (o) any words that are new to you.”

---

**CORE CONCEPT – STORYTELLING**

**READ ALOUD (5 MINUTES)**

1. One teacher should start reading out loud. After he/she finishes the first paragraph, he/she can call out another teacher’s name so that they read the next paragraph.

2. While reading:
   - Put an exclamation point (!) next to anything that you find important
   - Put a question mark (?) next to anything you don’t understand or don’t agree with
   - Circle (o) any words that are new to you.
Learning can be enjoyable if teachers use appealing methods of teaching. Research shows that pupils’ level of motivation is directly proportional to their achievements. The ability to motivate pupils is a very important teacher characteristic. Storytelling methods in teaching are very effective for motivating pupils’ desire to learn. Storytelling is a teaching technique where the teacher narrates a story and the pupils listen; in the context of maths class, storytelling can be used to introduce or explain a difficult mathematical concept in the form of an engaging story.

Since the beginning of cultural history, people have been passing on knowledge through speaking, listening and storytelling. Storytelling captures a child’s imagination; they sit intently listening without distraction eager to know what happens next. Stories direct the listeners’ emotion toward its content. Stories are interesting and can present ways to think and act as the stories’ heroes and characters. When children listen to stories, they create mental images that belong to them, connecting the content to something personally significant. Young children are in the age of imagination, and because of this, teaching should be delivered to them through images.

Why use storytelling?

- **Improving Language Skills**
  As young children listen to a storyteller, they hear inflections in speech and words presented in a compelling and fascinating way. Older children can expand their vocabulary and learn skills that may serve them well later. Children will see and hear the building of plot, characterization, climax, conflict, conclusion, etc. Perhaps rhyme or poetic prose will be used to tell the story, allowing children to hear the way the language sounds and how that can add to the story.

- **Increasing Vocabulary**
  Development of vocabulary is an essential part of learning. Maths has words that are unique to the subject. Words such as minus, add, square and symmetry are rarely used in children’s everyday life. However, if these words are gently introduced through stories, children will have a picture of what we use them to represent. This will help children to be more comfortable with them.

- **Developing Memory Skills**
  Without books or illustrations, children have to remember key points of the plot and character names. This is an excellent exercise in memorization skills and it also may help guide children when they wish...
Introducing New Worlds
Storytelling opens children’s minds to other cultures and life philosophies; it develops the inner world of imagination and creative thinking. Children tap into their imaginative minds and provide their own imagery. Storytelling is also a way to bring history alive and inspire further exploration of historical events.

When to use storytelling?
Storytelling can help children understand mathematical concepts that are difficult to understand when abstracted in symbols. It is also useful to introduce a new topic, draw focus to a new idea or conclude with as a reinforcement activity. It can be used during a lesson for any maths competency. Storytelling is suitable for all primary level standards. It can even be used in higher standards in secondary school.

How to tell a story?
Storytelling is effective when delivered with emotion, intonation in the voice where appropriate and accompanied by gestures and acting. It is made even more enjoyable when the storyteller uses constant eye contact with the listeners and makes adjustments and clarifications when necessary to enhance understanding. Therefore, it is important for the teacher who is telling the story to know the story well and avoid reading it from a book or paper.

Note that storytelling is different from solving word problems in mathematics. Storytelling is used to capture the imagination of the child and direct their focus to a topic through a story. Word problems are mathematical exercises presented in the form of a story and require finding a solution. Word problems will be discussed in another module.

GROUP DISCUSSION (10 MINUTES)
1. What were some of the new or important ideas that you marked with an exclamation (!) point?
2. What were some of the unclear ideas that you marked with an exclamation (?)?
3. What were new concepts that you circled?

ACTIVITY – STORYTELLING

<table>
<thead>
<tr>
<th>Learning Objective:</th>
<th>Lesson Objective:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Count up to 100</td>
<td>Count to 100 by fives</td>
</tr>
<tr>
<td>Material: 1 to 100 Number Chart</td>
<td>Vocabulary or Phrase:</td>
</tr>
<tr>
<td>Activity: Story telling, Number Line, Fill in the blank</td>
<td>Skip count by fives</td>
</tr>
</tbody>
</table>

Steps to follow:

**ACTIVITY**

**SAY TO TEACHERS:**
“Now you will do an activity with your group. First take 5 minutes to silently read the example lesson that illustrates how to incorporate storytelling into your maths lesson.”

**SILENT REFLECTION (5 MINUTES)**
- Read the activity below silently and think about how you can try it in your classroom
- Write down any doubts or questions in your notebook to share with the group at the end of this session
1. **Introduction** (5 minutes): Begin by telling the class a story about the number 5.

Grace was a grateful little girl. Every morning, when she woke up, she felt thankful for all that she had. She always had a lot to eat and clean clothes to wear. She went to school every day, did her homework on time, and then would play with her brothers and sisters. If her mom or dad needed her help, she was always willing. One day Grace noticed that not all of her classmates were so lucky or happy. She saw that Jonathan was often absent and so was his sister Rose. She asked James why he was absent and he said he didn’t have any exercise books or pencils to write with and neither did Rose. All of this made Grace very sad. She didn’t know what to do. Then suddenly, one morning, she awoke with a bright idea. I must help my friends to be happy she said to herself. I will give them one of everything that I have. So the next day, Grace picked up 5 packets of biscuits – one for her, one for Jonathan, one for Mary, one for James and one for Rose. She picked up 5 exercise books – one for her, one for Jonathan, one for Mary, one for James and one for Rose. And she picked up 5 pencils – one for her, one for Jonathan, one for Mary, one for James and one for Rose. Grace was very pleased with herself. It made her happy to share her happiness with her friends. She skipped and jumped and almost ran all the way to school with her school bag stuffed. She had 5 packets of biscuits, 5 sharpened pencils and 5 exercise books to share with herself and all her friends.

- After reading the story, ask some questions about the story. For example: Would you like Grace to be your friend? Explain why? Do you know any who reminds you of Grace?

2. **New Knowledge** (15 minutes):

- Draw a number line on the board from 0 to 30 (you can do this before the start of the class to save time).
- Instruct the children to start at zero and count in their head silently and call out loud every 5th number as you draw the arrows on the number line. For example: ZERO [1, 2, 3, 4 in their heads silently] FIVE [6, 7, 8, 9 in their heads silently] TEN [11, 12, 13, 14 in their heads silently] FIFTEEN. Make a game of it, repeating this chorally several times.

- Now ask the class “Do you notice a pattern when you count by 5s starting at zero?”
- Remain silent and give children ample time to think about your question. Repeat the question if needed.
- After they give their responses, you can add your response: “When you count by fives starting from zero the numbers create a pattern. All the numbers end in a zero or a five.” Point to the 1 to 100 Number Chart on the wall to reiterate the pattern.
3. **Reinforcement (15 minutes):**
   - Now point to the 100s number chart on the wall and ask the class to count out loud by 5s as you point at the number 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60, 65, 70, 75, 80, 85, 90, 95, 100.
   - Repeat this a few times, counting forward and backward. You can add a tune to the counting so that it is like a song. Reiterate the pattern by repeating: "When you count by fives the numbers create a pattern. All the numbers end in a zero or a five."

4. **Lesson Knowledge Check (20 minutes):**
   - Now put up 5 exercises on the board for pupils to copy down in their notebook or slate and fill in the blank. Walk around and check their work. If children are having trouble, you can instruct them to use their ruler like a number line and count using their fingers. Complete the exercises with the class:

   Fill in the blank
   
   5, 10, ___, 20, ___, 30, 35, 40, 45, ___
   ___ 20, 25, 30, ___, 40, ___, 50, 55, 60
   ___, ___, 30, 35, 40, 45, 50, ___, 60, 65

   What is 5 more than 70? ____
   What is 5 more than 85? ____

This lesson is set for 1 hour. If you set the two half-hour blocks for mathematics together, this entire lesson can be completed. Alternatively, you can redesign the lesson into two separate half-hour blocks.

**ROLE PLAY (15 MINUTES)**

- In a group, where one person is the teacher and the others pretend to be pupils, practice the lesson.

**WRITE INDIVIDUALLY (30 MINUTES)**

- The activity above also included a story. The art of storytelling is a creative and engaging way capturing your pupils’ attention while convey an idea or concept.
- Take 15 minutes to compose a short story that can be used in a maths classroom. You can make it humorous and it can teach a moral lesson while conveying a mathematical idea. To make it easy, you can follow these steps to come up with a story:
  1) Pick a mathematics topic to address (e.g. skip counting by tens or adding by twos or dividing equally by three, geometric shapes etc.)
  2) Pick a topic for the story such as something about health or the environment or sports or going to the market or work in the fields
LESSON PLANNING

SAY TO TEACHERS:

“To improve pupils’ learning, it is very important that teachers are able to practice the teaching techniques they learn from INSET in their classrooms. For this, it would be beneficial to develop the lesson plans together as a group instead of individually. When we support each other through this process of lesson planning, we will be able to design better quality lessons. So let us dedicate at least 2 hours to lesson plan together. Let us decide now when we will meet next to complete this component of the INSET for this module.”

JOINTLY DETERMINE WHEN THE TEACHERS WILL MEET AGAIN TO COMPLETE THE LESSON PLANNING SECTION OF THIS MODULE. WHEN YOU MEET AGAIN TO WORK ON THIS SECTION, WALK AROUND AND SEE IF TEACHERS NEED HELP WITH THE PLANNING.
CONCLUSION

**SAY TO TEACHERS:**

“We have come to the end of the module. Please take minute to reflect on the session. Fill in the form to record your appraisal of today’s module. After you are finished, rip the page out and give it to me. Please be honest with your answers because your feedback will help to improve school based INSET in the future.”

**COLLECT THE TEACHERS’ APPRAISAL FORMS AND BRING THEM TO THE NEXT WARD CLUSTER MEETING. WHILE THE TEACHERS ARE FILLING OUT THE APPRAISAL FORM, REFLECT ON THE OVERALL SUCCESSES AND CHALLENGES OF TODAY’S SESSION AND COMPLETE THE FORM BELOW.**

WRITE INDIVIDUALLY (15 MINUTES)

Please fill in the following form to record your appraisal of today’s module. After you are finished, rip this page out and give it to your INSET Coordinator. Please be honest with your answers because your feedback will help to improve school based INSET in the future.

<table>
<thead>
<tr>
<th>Marking Scheme for the INSET Appraisal:</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 points: I completely disagree with the statement</td>
</tr>
</tbody>
</table>

**INSET Appraisal Form:**

- School: ______________________
- District: _________________________
- Region: ________________________
- Appraisal for Module #________
- Topic of Module: __________________________
- Number of teachers who participated: ________
- Did the Head Teacher participate: Yes/No
- Was the INSET Coordinator present to facilitate: Yes/No

Read the statements below and tick the box that indicates whether your answer:

<table>
<thead>
<tr>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. The Core Concepts of today’s module was very clear. I feel like I have a very good understanding of the topics.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. This module had many useful and relevant strategies that I will try in my class.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. The amount of time it took to complete this module was appropriate. It did not feel too long.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. This module prompted a lot of interesting discussion and reflection.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. The INSET Coordinator was prepared for the session – he/she has clearly read the module and had all the materials ready</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. The INSET coordinator effectively facilitated discussion – he/she knows how to get people talking and how to help with answers</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. The INSET coordinator knows how to maintain a good group dynamic – he/she makes sure that teachers are supportive, collegial and energised</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. The INSET coordinator knows how keep teachers motivated – he/she follows up with teachers who are absent/late and reminds us of why INSET is important</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- Close the session by setting the meeting time and date for the Lesson Planning session for this module and the meeting time and date for the new module.